

Appl. No. : 10/618,900
Filed : July 14, 2003

AMENDMENTS TO THE CLAIMS

Please amend Claim 1 as follows. Insertions are shown underlined while deletions are ~~struck through~~. Please add Claim 25.

1 (currently amended): A single-wafer-processing type CVD apparatus for forming a thin film on an object to be processed, which comprises:

a reaction chamber;

a susceptor for placing said object thereon, which is provided inside said reaction chamber;

a shower plate for emitting a jet of reaction gas to said object, which is disposed parallel and opposing to said susceptor;

an orifice for bringing a liquid raw material for deposition and a carrier gas into said reaction chamber, which is formed through a ceiling of said reaction chamber;

an evaporation plate for vaporizing said liquid raw material, which is disposed in a space between said ceiling of said reaction chamber and said shower plate, said evaporation plate having a vaporization surface which is a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending outward toward an outer periphery of the shower plate, said vaporization surface having pores distributed exclusively in the vicinity of its outer periphery, ~~wherein the liquid raw material flows on the vaporization surface toward the pores;~~ and

a temperature controller for controlling said shower plate and said evaporation plate at respective given temperatures.

2 (original): The apparatus as claimed in Claim 1, wherein a base area of said evaporation plate is within the range of 80% to 120% of a base area of said space.

3 (original): The apparatus as claimed in Claim 1, wherein the given temperature of said evaporation plate is within the range of 40°C to 300°C.

4 (original): The apparatus as claimed in Claim 3, wherein the given temperature of said shower plate is in the range of 0-50°C higher than the temperature of said evaporation plate.

5 (previously presented): The apparatus as claimed in Claim 1, wherein said temperature controller comprises at least one heater which is arranged adjacently to said evaporation plate and to said shower plate, temperature detectors which are respectively linked to said evaporation

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plate and to said shower plate, and a temperature regulator which is linked to said heater and said temperature detectors.

6 (original): The apparatus as claimed in Claim 1, wherein said liquid raw material is a solution wherein a metal complex raw material or a solid raw material used for deposition is dissolved in a solvent.

7 (original): The apparatus as claimed in Claim 1, wherein said carrier gas is an inert gas.

8 (original): The apparatus as claimed in Claim 1, which further comprises a pressure detector for detecting a pressure in a space between the ceiling of said reaction chamber and said evaporation plate, and a pressure detector for detecting a pressure in a space between said shower plate and said susceptor.

9 (previously presented): The apparatus as claimed in Claim 1, wherein the evaporation plate is a hollow plate having an upper plate, a lower plate, and an interior therebetween, said upper plate constituting the upper surface, said lower plate having pores, wherein the liquid raw material flows through the pores of the upper plate, the interior, and the pores of the lower plate toward the shower plate.

10 (previously presented): The apparatus as claimed in Claim 9, wherein the upper plate of the evaporation plate is a conical surface on which the liquid raw material flows from the center to the periphery of the upper plate.

11 (previously presented): The apparatus as claimed in Claim 9, wherein the pores of the upper plate are arranged along the periphery of the upper plate at equal intervals.

12-21 (canceled)

22 (previously presented): The apparatus as claimed in Claim 5, wherein the at least one heater is arranged exclusively downstream of the orifice.

23 (previously presented): The apparatus as claimed in Claim 9, wherein the number of the pores of the lower plate is greater than that of the upper plate.

24 (previously presented): The apparatus as claimed in Claim 9, wherein the pores of the upper and lower plates are arranged concentrically.

25 (new): A single-wafer-processing type CVD apparatus for forming a thin film on an object to be processed, which comprises:

a reaction chamber;

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a susceptor for placing said object thereon, which is provided inside said reaction chamber;

a shower plate for emitting a jet of reaction gas to said object, which is disposed parallel and opposing to said susceptor under a ceiling of the reaction chamber;

an orifice for bringing a liquid raw material for deposition and a carrier gas into said reaction chamber, which is formed in and through the ceiling of said reaction chamber;

an evaporation plate for vaporizing said liquid raw material, which is disposed downstream of the orifice and upstream of the shower plate in a space between said ceiling of said reaction chamber and said shower plate, said evaporation plate having a vaporization surface which is a convex surface facing the ceiling of the reaction chamber, having a center under the orifice, and extending outward from the center in a downstream direction toward an outer periphery of the shower plate, said vaporization surface having pores distributed in the vicinity of its outer periphery which is disposed close to the outer periphery of the shower plate; and

a temperature controller for controlling said shower plate and said evaporation plate at respective given temperatures.